DOCUMENT RESUME

ED 127 417 CE 006 899

AUTHOR Yoder, Dale; And Others
TITLE OMU Organization and Personnel. Evaluation of the Marine Corps Task Analysis Program. Technical Report No. 6.
INSTITUTION California State Univ. Foundation, Los Angeles.
SPONS AGENCY Office of Naval Research, Arlington, Va. Personnel and Training Research Programs Office.
PUB DATE Oct 75
CONTRACT N00014-74-A-0436-0001
NOTE 70p.; For related documents see CE 007 018, 007 021, 007 017, 007 147, and 007 662

EDRS PRICE MF-$0.83 HC-$3.50 Plus Postage.
DESCRIPTORS Improvement Programs; Manpower Utilization; *Military Organizations; *Organizational Development; *Organizational Effectiveness; Personnel Evaluation; *Program Evaluation; Staff Improvement; Task Analysis
IDENTIFIERS Marine Corps

ABSTRACT

The basic mission of the Office of Manpower Utilization (OMU) of the U.S. Marine Corps is to conduct Task Analyses of Marine Corps Occupational Fields. In its desire to maximize its effectiveness, OMU requested an independent evaluation of its program. This report summarizes studies and results of part of that evaluation, Research Area 5, "OMU Organization and Personnel," one of eight research areas into which the study was divided. The basic tasks of Research Area 5 were to discover, describe, and evaluate OMU policies and procedures relative to organization, task analysis, team assignment and structure, and team member procurement; identify indications of less than optimal performance and alleged deficiencies; design and evaluate experimental alternatives and/or modifications; summarize problem areas and report findings from experiments; identify and evaluate options in change and prepare recommendations for action. This report is a frank discussion of methods and phases of the study, findings, changes that occurred as a result of feedback during the study, and recommendations for future actions. Organizational structure at the beginning and end of the research are shown. (Author/WL)

****
* Documents acquired by ERIC include many informal unpublished *
* materials not available from other sources. ERIC makes every effort *
* to obtain the best copy available. Nevertheless, items of marginal *
* reproducibility are often encountered and this affects the quality *
* of the microfiche and hardcopy reproductions ERIC makes available *
* via the ERIC Document Reproduction Service (EDRS). EDRS is not *
* responsible for the quality of the original document. Reproductions *
* supplied by EDRS are the best that can be made from the original. *
****

ED127417

OMU ORGANIZATION AND PERSONNEL

Dale Yoder, John M. Hemphill, Jr.
and C. Harold Stone

U S DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

Technical Report No. 6.

Evaluation of the Marine Corps
Task Analysis Program

A Research Project Supported By
Commandant of the Marine Corps (Code RD)
And Monitored By
Personnel and Training Research Programs
Psychological Sciences Division
Office of Naval Research
Contract No. N00014-74-A-0436-0001
NR 151-370

Approved for public release; distribution unlimited.
Reproduction in whole or in part is permitted for
any purpose of the United States Government.

California State University, Los Angeles
October, 1975

CE006899

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER Technical Report No. 6	2. GOVT ACCESSION NO.	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) OMU Organization and Personnel		5. TYPE OF REPORT & PERIOD COVERED Technical Report and Final Report for Research Area 5. 15 June 1974 - 31 July 1975
		6. PERFORMING ORG. REPORT NUMBER TA Technical Report No. 6
7. AUTHOR(s) Dale Yoder, John M. Hemphill, Jr. and C. Harold Stone		8. CONTRACT OR GRANT NUMBER(s) N00014-74-A-0436-0001
9. PERFORMING ORGANIZATION NAME AND ADDRESS California State University, Los Angeles Foundation 5151 State University Drive Los Angeles, Calif. 90032		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS PE 61153N, Proj. RR 042-04 TA RR 042-04-02 NR 151-370
11. CONTROLLING OFFICE NAME AND ADDRESS Personnel and Training Research Programs Office of Naval Research (Code 458) Arlington, Virginia		12. REPORT DATE October, 1975 13. NUMBER OF PAGES 56
14. MONITORING AGENCY NAME & ADDRESS(if different from Controlling Office)		15. SECURITY CLASS. (of this report) Unclassified 15a. DECLASSIFICATION/DOWNGRADING SCHEDULE

16. DISTRIBUTION STATEMENT (of this Report)

Approved for public release; distribution unlimited. Reproduction in whole or in part is permitted for any purpose of the United States Government.

17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)

18. SUPPLEMENTARY NOTES

This research was sponsored jointly by the Commandant of the Marine Corps (Code RD) and the Office of Naval Research.

19. KEY WORDS (Continue on reverse side if necessary and identify by block number)

OMU Organization Structure
Task Analysis Teams
Task Analysis Training
USMC Task Analysis Organization
Task Analysis Personnel

20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

The basic mission of the Office of Manpower Utilization, HQ, USMC (OMU) is to conduct task analyses of Marine Corps Occupational Fields. In its desire to maximize its effectiveness, OMU requested an independent evaluation of its program. This report summarizes the tasks and results of part of that evaluation, Research Area 5, "OMU Organization and Personnel", one of eight Research Areas into which the study was divided. The basic tasks of Research Area 5 were to discover, describe and evaluate OMU policies and procedures relative to organization, task analysis team assignment and structure, and team member

DD FORM 1 JAN 73 1473 EDITION OF 1 NOV 65 IS OBSOLETE
S/N 0102-LF-014-6601

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

procurement; identify indications of less than optimal performance and alleged deficiencies; design and evaluate experimental alternatives and/or modifications; summarize problem areas and report findings from experiments; identify and evaluate options in change and prepare recommendations for action. The research was not conducted in a static situation. Feedback to OMU was provided by the research staff as findings were made. Direct actions often were initiated by OMU immediately, and OMU thus represented a "moving target" during the course of the study. This report is a frank discussion of methods and phases of the study, findings, changes that occurred during the study and recommendations for future actions. Organizational structure at the beginning and the end of the research are shown. One problem was still not resolved by the end of this study. Some NCOs assigned for duty with OMU do not possess the qualifications required for effective performance in the highly specialized tasks they are expected to perform. It is recommended that OMU be involved in the review of qualifications of NCOs being considered for assignment to its staff before assignment decisions are made.

SUMMARY

The basic mission of the Office of Manpower Utilization, HQ, USMC (OMU) is to conduct Task Analyses of Marine Corps Occupational Fields. In order to maximize its contribution to effective utilization of USMC manpower resources, OMU, on its own initiative, requested the Commandant of the Marine Corps for funding for conduct of an independent evaluation of its Task Analysis program. This report summarizes studies and results of Research Area 5, "OMU Organization and Personnel", one of eight Research Areas into which the evaluation was divided by the California State University, Los Angeles, Foudantion research staff.

The specific research tasks of Research Area 5 were to discover, describe and evaluate OMU policies and procedures relative to organization, task analysis team assignment and structure, and team member procurement; identify indications of less than optimal performance and alleged deficiencies; design and evaluate experimental alternatives and/or modifications; summarize problem areas and report findings from experiments; identify and evaluate options in change and prepare recommendations for action.

This research was not conducted in a static situation. Feedback to OMU was provided by the research staff as findings were made. Direct actions often were initiated by OMU immediately, and OMU thus represented a "moving target" during the course of the study. This report is a frank discussion of methods and phases of the study, findings, changes that occurred during the study and recommendations for future actions. Organizational structure at the beginning and the end of the research are shown.

One area of special concern to the research staff was not resolved by the end of this phase of the study. OMU has no voice in the selection of NCOs assigned to its staff. Some refinements in NCO qualifications for assignment have been made during the course of the study. However, due to the importance of OMU's activities in improving utilization of Marine Corps manpower resources, the quality of its staff is of critical importance. It is recommended that OMU be directly involved in the selection of NCOs to insure that newly assigned personnel possess the qualifications essential for accomplishment of its mission.

TABLE OF CONTENTS

CHAPTER		PAGE
	Preface	i
I	Introduction	1
II	Study Methods and Phases	4
III	Phase I: Overview of the Office of Manpower Utilization (OMU) and Research Questions for the Study	9
IV	Phase II: Summary Discussion of the Data and Findings	16
V	Phase III: Conclusions	33
Appendix		46

LIST OF FIGURES

Figure 1 10

Figure 11 36

PREFACE

For four years, beginning in 1970, the United States Marine Corps has maintained a continuing Task Analysis (TA) program, designed to study, discover and report, quite specifically, what Marines do in the daily performance of the specific duties to which each is assigned. Responsibility for leadership and direction in this TA program has been placed in the Office of Manpower Utilization (OMU), HQ, USMC, Quantico, Virginia.

In early 1974, the USMC contracted with the California State University, Los Angeles Foundation which agreed to provide a comprehensive review and evaluation of the entire Task Analysis program. This is one of several major sections of the final research reports resulting from that arrangement.

This report is focussed on OMU ORGANIZATION and PERSONNEL, which is one of several major research areas defined by the preliminary, overall review as deserving particular attention. There are several major steps or phases in the Task Analysis program, and our final summary report for the project, to be prepared later this year, will describe our findings and their implications for each of these phases.

The TA process begins with the selection of individual occupational fields (OF's) to be subjected to the Task Analysis process. Thereafter the major phases of each TA project include

1. Preliminary study phase.
2. Observation and interview of individual Marines on their

jobs to discover and record the tasks they perform in the course of their their duties.

3. Preparation of a comprehensive Task Inventory for the OF being studied.

4. Administration of the Inventory to a sample of all Marines in the OF to discover the extent to which they are actually engaged in the performance of each of the listed tasks. For that purpose they describe in writing the breadth of their duties, indicating relative time spent on each task.

5. Analysis of these responses to discover particular patterns of tasks, by job title, rank and MOS.

6. Preparation of a Task Analysis Report for each OF, with suggestions and recommendations for changing assignments to effect improved utilization of the manpower assigned to all billets in the OF under study.

Other sections of our final report deal with each of these phases. As noted, this section is concerned with Organization and Personnel in OMU. In this report, the first chapter outlines the broad coverage of the subject-matter and the series of major steps in which existing procedures were identified and described, and specific questions for further study were spelled out. The remaining chapters report findings and suggestions for modification of the process. Chapter V summarizes the research and conclusions with respect to OMU Organization and its appropriate use of the personnel allocated to OMU.

CHAPTER I

INTRODUCTION

OVERVIEW

Research Area 5 is one of eight Research Areas in the Evaluation of the Marine Corps Task Analysis Program by California State University, Los Angeles. The stated purpose of Research Area 5 was to examine critically the management, personnel, and organizational aspects of the Office of Manpower Utilization, HQ, USMC (OMU) with the aim of improving overall efficiency and effectiveness. This report reviews the data gathered for this Research Area and discusses the findings and recommendations.

This applied research effort was conducted during the period from July 1974, to July 1975. The specific research tasks originally defined for Research Area 5 and accomplished during this period are listed below:

1. Discover and describe present OMU policies and procedures relative to organization, team assignment and structure, and team member procurement.
2. Identify indications of less than optimal performance, alleged deficiencies, criticisms, etc.
3. Collect additional data as appropriate from staff reports and interviews.
4. Review professional literature for similar/parallel problems and/or programs.
5. Design and evaluate experimental alternatives and/or modifications.

6. a. Summarize problem and suspect areas.
   b. Summarize and report findings from experiments.
   c. Identify and evaluate sponsor options in change.
   d. Prepare recommendations for sponsor action.

7. Prepare final report.

This document is the product of task 7 above. Two supplements, under separate cover, were also products of Research Area 5. They are entitled "Program Evaluation and Review Technique (PERT): A Planning and Control Tool for Occupational Field Studies", and "Management Auditing as a Possible Extension of Task Analysis."

Decision to develop the PERT manual was based upon our organizational studies that suggested techniques for planning and executing Occupational Field (OF) Task Analyses would enhance organizational effectiveness of OMU. The report provides a straightforward description of a tested technique and includes specific step-by-step suggestions for implementation and use by OMU. The report on management auditing also came about as a result of our studies of the OMU organization and its functions. The purpose of the report is to indicate a possible future extension of OMU's mission to include analyses of organization, management, and other personnel aspects of OFs. As a working paper, the document briefly describes the management audit, discusses some of its implications for OMU, annotates selected literature, and provides other references on the subject.

OMU AS A RESEARCH SPONSOR

The success of any applied research effort is directly related to

the nature of the working relationship between research team and the sponsor of its efforts, as well as to the receptivity of the sponsor to innovation and change.

During the initial orientation meeting for the project, members of OMU top management suggested three reasons for requesting an external agent to examine and evaluate OMU:*

1. We don't have the time to analyze ourselves while carrying out our basic mission.
2. We need exposure to fresh ideas.
3. We are too close to the problem.

A key point stressed by OMU members at the initial meeting which indicated their receptivity and set the stage for a most productive working relationship was:**

> It is for the third reason that we are hesitant to overdefine the specific problem areas that we would like investigated. There may be more urgent problems than those we would list, but we could be blind to their existence. Furthermore, we don't want to establish an arbitrary frame of reference for the study at the outset that might narrow the scope of the study.

We found that the "open-book" spirit this implied turned out to be a reality; OMU personnel have been cordial, enthusiastic, and receptive to new ideas throughout the course of our research. In all phases of our studies, the personnel of OMU have done everything possible to facilitate our research efforts, and have demonstrated unusual initiative in both considering and recommending alternatives, and in implementing suggested changes.

---

*Outline prepared by OMU Staff dated 21 May 1974, and entitled, "Preliminary Listing of Organization Goals and Expectations Regarding the Evaluation of the Marine Corps Task Analysis Program."

**Ibid.

CHAPTER 4

STUDY METHODS AND PHASES

INTRODUCTION

The study approach consisted of three general phases. Each phase included data gathering, data analysis, and feedback. In-depth personal interviews, focused-group interviews, questionnaire surveys, direct observation methods, and mail and telephone interchanges were used to collect data. In all cases, individual responses have been held in strict confidence.

In addition, secondary sources of data were reviewed as they related to organizational, management, and personnel aspects of OMU, and the two supplements referred to on page 2 are products of this effort.

The following description of the three study phases for Research Area 5 is related more to the changing focus of research during the study than to definitive time periods. In all phases, data were gathered and analyzed, and major findings and implications were reviewed with the top management of OMU. As with other Research Areas in the project, the philosophy was to share the major results of research efforts as the study progressed rather than to wait until the end of the contract period.

This was not a study of a purely historical phenomenon, nor was it an analysis of a static condition that would or could change only after research was completed. We were examining and working with a dynamic organization that was in fact altered during the course of the study as a result of internal pressures for change, higher command pressures

altering plans and priorities, internal initiatives to seize opportunities for improvement, and contributions made by our joint research efforts.

PHASE I

The first phase of the study was exploratory in nature. In this phase, we were: 1) seeking knowledge about existing OMU organization structure, management policies and practices, and personnel policies and procedures, and 2) searching for and formulating the right questions to ask about organization, management and personnel.

Initially, top management of OMU suggested three areas of inquiry for investigation which were later incorporated into Research Area 5.

1. "Team Concept" - Should we consider alternatives?
2. What's our state of organizational health?
3. What skills and levels of skills do we need in the organization?

The primary data-gathering effort for this phase was carried out during an on-site visit by two staff members of Research Area 5 during July of 1974. Personal interviews were held with over half of the OMU staff, including all available officers. In addition, focused-group interviews were conducted that included all available NCOs in the office. The researchers also observed three Task Analysis teams in action -- one team was in the planning stage for a forthcoming OF study. The other two were in the process of task inventory construction. Further, our researchers were briefed thoroughly on the Task Analysis process by one of the T.A. teams and were given a complete tour of the OMU facility.

The large volume of data from these activities was carefully reviewed and evaluated, resulting in the three intitial areas of inquiry listed above being given greater specificity, as well as in the expansion of the study to include additional aspects of OMU organization, management, and personnel.

PHASE II

Phase II provided a more penetrating data-gathering approach geared to specific topics identified in Phase I. Other on-site visits to OMU by members of this Research Area took place in November 1974 and in February 1975.

A detailed questionnaire (see Appendix) was prepared and pretested on the basis of Phase I efforts. It was administered to nine officers and 16 NCOs at OMU. Additional on-site personal interviews and observations were conducted, and the research team participated in group discussions concerning possible organizational changes in OMU.

Also during Phase II, two officers visited the research team's base. Various matters were discussed, including the anticipated efficacy of recommendations contemplated by the Research Area 5 team, and the progress of proposals relative to possible reorganization of OMU.

Throughout the study, liaison was maintained with members of the OMU staff, and considerable research was conducted to evaluate organizational alternatives.

PHASE III

During this phase, efforts were directed toward defining problems, analyzing data, gathering secondary data, and reviewing with appropriate OMU personnel some of the major findings and implications of earlier research. The products of Phase III include this report, the two supplementary reports mentioned previously, and substantive organizational changes implemented by OMU during the course of our studies.

SUMMARY

A combination of primary data-gathering approaches was used for Research Area 5. These included individual depth-interviews, focused-group interviewing, direct observation, questionnaire techniques, and telephone and mail interchanges. The exploratory phase helped identify relevant problems and assure that the researchers were asking the right questions. Phase II was primarily a data-gathering effort geared to answering questions generated in Phase I. Phase III was devoted to collecting additional data, analyzing data, collaborating in planned organizational change efforts in OMU, and documenting research efforts and results.

The following chapters are organized in sequence to report on the three research phases summarized above. Chapter III presents the organization structure and management and personnel practices existing at the beginning of the study and identifies areas and questions regarded as warranting further investigation in Phase II. Chapter IV reviews these data and presents the major findings. Chapter V assesses recent OMU organizational changes as they relate to the findings of

the study together with a summary of the three research phases.

CHAPTER III

PHASE I: OVERVIEW OF OMU AND RESEARCH QUESTIONS FOR THE STUDY

DESCRIPTION OF OMU ORGANIZATION WHEN STUDY BEGAN

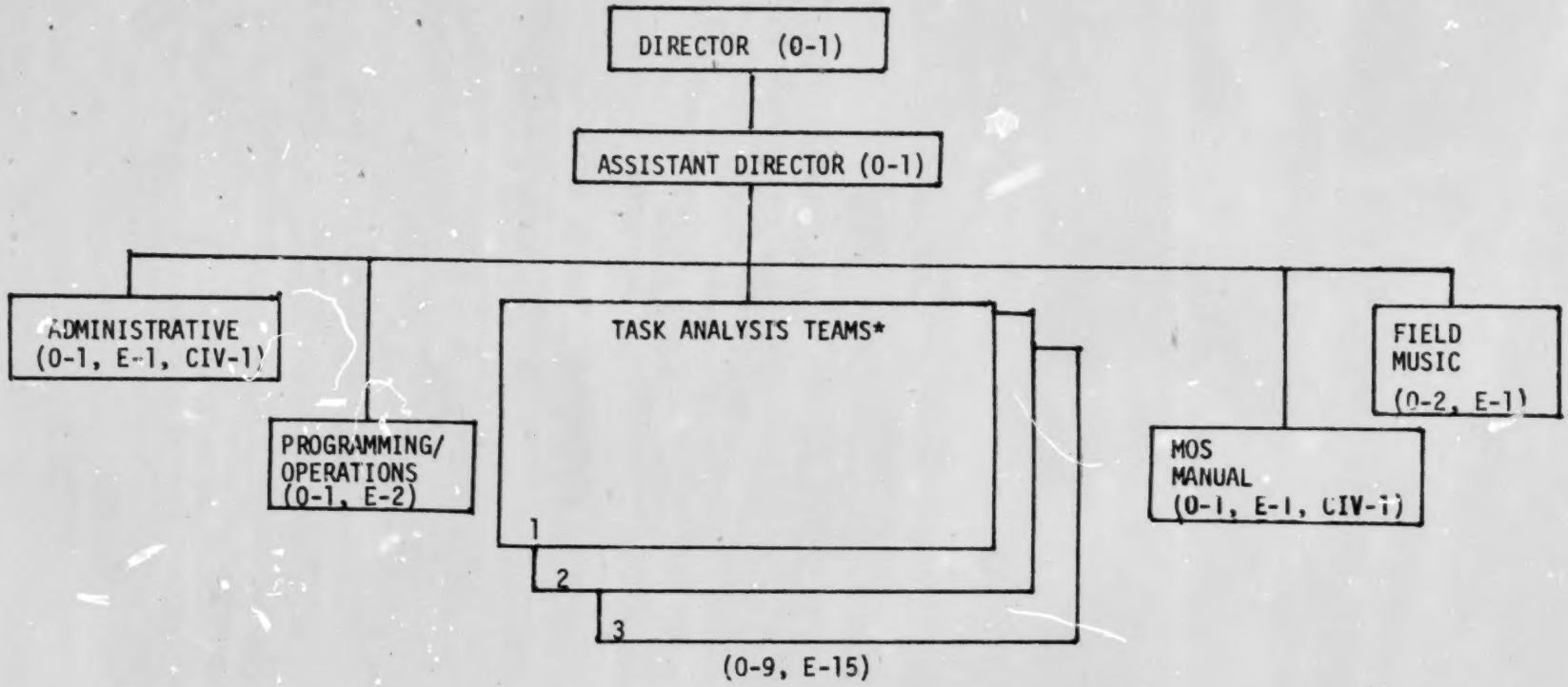
The Office of Manpower Utilization was authorized a total of 16 officers, 20 enlisted men and two civilians under USMC T/O 5050. A block diagram of the Office appears on the next page. Although the office had several functions, the Marine Corps Task Analysis Program was (and still is) considered the central function, and this program utilized the bulk of office personnel.

As shown in the diagram. the Task Analysis section of OMU was made up of three groups: 1) Top management, consisting of the Director and Assistant Director; 2) Task Analysis teams, consisting of three officers and five enlisted marines for each of the three teams, with each officer in charge reporting directly to the Assistant Director; and 3) Staff functions of administrative, programming/operations, and MOS Manual, each reporting to the Assistant Director. The Field Music unit was assigned to OMU for administrative purposes only, and performs no functions that are related to the Task Analysis program.

MANAGEMENT PRACTICES

The Director and Assistant Director performed the top management function in OMU in the areas of organizing and staffing, directing, controlling and planning overall OMU operations. The reporting of OMU efforts to higher levels in the Marine Corps and the fiscal aspects of

OFFICE OF MANPOWER UTILIZATION
(A FIELD ACTIVITY UNDER THE STAFF COGNIZANCE OF THE
MANPOWER PLANS & POLICY DIVISION, MANPOWER DEPARTMENT,
HEADQUARTERS, U.S. MARINE CORPS)
1974



*EACH TEAM = 3 OFFICERS
5 ENLISTED

TOTALS: 0-16, E-20, CIV-2

OMU operations were handled largely by top management.

Staff functions supplemented Task Analysis Team efforts in such areas as typing, computer analysis of data, and MOS Manual updating.

Each of the Task Analysis teams conducted OF studies as a virtually self-contained unit and utilized staff support as outlined above. The teams formed a locus of operation in OMU since they were responsible for conducting OF studies from start to finish.

Each team utilized its personnel differently in conducting OF studies. Two of the teams had formally assigned specialized duties to individual members. Another team had also done this, but informally and to a lesser extent. One team practiced "job rotation" in conjunction with assigning specialist duties to members, so that specialist duties such as filing or proofreading were exchanged among members on a regular basis. The teams' NCOs participated to some extent in phases one through six of OF studies, but this varied widely from team to team. For example, participation in the technical analysis of data was limited to four members in one team, while only the officers performed this duty in another. None of the teams utilized NCOs to any extent in writing or staffing final reports of Task Analysis Studies.

The officer functions in all teams conformed to standard military procedure. The officer in charge was responsible for all team assignments, and the deputy acted as an executive officer who screened and coordinated correspondence, task allocation, etc., and stood in for the officer in charge in his absence.

The officer in charge and the executive officer of each team practiced delegation of duties in varying degrees. In one team,

officers were actively involved in all activities within each phase of an OF study. Their involvement ranged from making routine phone calls related to an OF study to final report preparation and writing. In another team, officers delegated most of the routine duties to NCOs, and were more directly involved in technical aspects of an OF study.

SELECTION AND ASSIGNMENT FOR DUTY AT OMU

Officers. Team leaders' billets were classified as "SEP Desirable," so that OMU received graduate-trained team leaders after all of the "SEP Necessary" billets in the Marine Corps had been filled. The educational backgrounds of officers assigned to teams included four having the master's degree, two working toward the master's degree, one with an undergraduate degree, and two within one or two years of completing the undergraduate degree. None of the officers had civilian experience related to Task Analysis.

About one-third of the teams' officers had specifically requested duty at OMU. The remainder indicated that they had either been offered the choice of OMU by their MOS sponsor or monitor and had accepted, or they had assumed duty at OMU because there were no open or acceptable billets in their primary MOS at the time of their decision.

NCOs. No formal specifications for selection and assignment of NCOs existed. Top management of OMU would often send memos to the Enlisted Assignment Branch requesting an NCO replacement and specifying desired grade/rank, and educational level. Generally, the minimum rank desired was Gy Sgt., E-7. There seemed to be a concensus among officers in OMU that if the man had attained E-7, he had enough

experience in the Marine Corps for assignment to OMU. No informal maximum rank criteria existed, but it was felt that there should be assurance of at least three years of service remaining before retirement.

A widely shared view among officers was that NCOs who were Degree Completion Program Graduates were highly desirable for selection and assignment to OMU.

None of the Teams' NCOs contacted during the study had volunteered for duty at OMU. All NCOs on T.A. teams were in pay grades E-7, E-8 and E-9. Three had attended college, one had the A.A. degree, and thirteen had completed high school or high school equivalency programs.

SUMMARY

This discussion provides an overview of what were found to be the organizational structure and overall management and personnel selection and assignment practices when the study for Research Area 5 was started. Our research goal was to examine these facets of OMU in more detail to determine problem areas and opportunities for improvement.

RESEARCH QUESTIONS TO BE EXPLORED

As pointed out in Chapter II, Phase I of the study was exploratory and resulted in the formulation of research questions to be further investigated in Phase II. The major questions that resulted from Phase I are as follows:

Organization Structure:

1. What are the advantages and disadvantages

of the present team structure in relation to the efficient and effective completion of OF studies?

a. How should present team size and composition be changed to improve performance? Is "down time" a function of team size, or are there different ways of scheduling duties that might be more effective?

2. What modifications to organization design might capitalize on individual talents and skills more fully?

a. Should there be more centralization/specialization or less?

Management Practices:

1. How are planning and coordination for OF studies accomplished, and how could they be improved?

2. On what basis should individuals and teams be evaluated for performance?

3. How effective are communication practices within and among teams?

4. Is the three-year tour of duty at OMU enough time for individuals to learn Task Analysis and to contribute effectively to the mission of OMU?

5. What are the advantages and disadvantages of the practice of having OF studies conducted by "naive" personnel, i.e., officers and NCOs who have neither experience nor training in an OF being studied?

Personnel Selection and Assignment:

1. Are the present criteria for selecting officers and NCOs for duty at OMU adequate?

2. Are there additional qualities or capabilities that should be sought in OMU personnel assignments?

Morale:

1. What is the overall organizational climate?

2. Are there dysfunctional conflicts or other factors that impede team work?

Preparation of Final Reports of Task Analysis Studies:

1. How could the process of preparing the final report be improved?

SUMMARY

These research questions were explored in Phase II, and the discussion of data collected appears in the next chapter. Two additional problem areas directly related to Research Area 5 should be mentioned. First, during Phase I, orientation to and training in Task Analysis were determined to be significant for the focus of further research; Research Area 6 in the project was created for this purpose.

Second, it was determined that since the scope of study in other Research Areas of the project did not include assessing final report preparation, as a phase of Task Analysis, it should be incorporated as part of Research Area 5, Phase II efforts.

CHAPTER IV

PHASE II: SUMMARY DISCUSSION OF THE DATA AND FINDINGS

INTRODUCTION

Reviewed in this Chapter are the data gathered in Phases I and II of Research Area 5, as described on pages 5 and 6 of Chapter II of this report. In each of the major sections -- Organization Structure, Management Practices, and Personnel Selection and Assignment -- the research questions raised during our studies are accompanied by a summarization of data.

ORGANIZATION STRUCTURE

Research question* What are the advantages and disadvantages of the present team structure in relation to the efficient and effective completion of OF studies?

Findings. Two reasons were given for having a team structure. First, as one officer stated, "OMU was originally organized this way, it seemed to work all right, and we stayed with it." Second, it was pointed out that "self-sufficient" team organization was consistent with the "Marine Corps spirit." The basic advantage of team structure appeared to be that it provided a locus of control in conducting OF studies, and gave team members a "sense of belonging" that would be compatible with their prior Marine Corps experience. In addition, one officer indicated that team structure provided a competitive

*Research questions discussed in this Chapter are listed on pp. 13 and 14 in Chapter III of this report.

atmosphere in the Office. However, competitiveness was found to be more of a disadvantage than an advantage, and very few in the Office felt that the net effect of team structure resulted in healthy competition.

Disadvantages of team structure were summarized by one officer as follows:

> It has divided the Branch into separate offices, staffed with personnel with different Marine Corps backgrounds. This separation becomes apparent in areas of cooperation among studies, social activities, and general harmony among teams.

A frequently expressed view was that the team concept did not fully capitalize on expertise within each team, and that this structure resulted in inter-team competition which, in turn, thwarted effective communication and the sharing of information. Lack of standardization for conducting OF studies was also attributed to team structure and competition, and this was viewed as a negative result.

Within teams, some conflict between officers and NCOs was noted, particularly in the opinions of enlisted men. These Marines viewed the structure as a hindrance to the group process and felt that their efforts were not appreciated by the officers. Several commented on a desire for stronger leadership, more definitive orders and instructions, less changing of task assignments after they were made, and more emphasis upon the team concept in their approach to the OF study. Many NCOs reported they did not participate in the planning or final report phases and had only limited responsibility in the analysis of data. Because of this, many felt their skills were not being used effectively. Many officers expressed the opinion that the NCOs were of limited value

in the studies; this opinion seemed evident to the NCOs.

Research questions. How should present team size and composition be changed to improve performance? Is "down time" a function of team size, or are there different ways of scheduling or allocating duties that might be more effective?

Findings. All of the officers except one, and half of the enlisted men agreed that teams were too large. The general feeling was that smaller teams would allow for more effective coordination and communication within the team and would keep all team members occupied. Of those who thought the present team size appropriate, several felt that the current number of members was needed only for certain phases of the study, particularly during observation and interviewing, inventory construction, and inventory administration.

In a focused group interview with NCOs, one of the researchers asked, "If I were an NCO and about to join OMU, what advice would you give me?" One response was, "I'd tell you to bring your coffee cup." The discussion that ensued indicated that substantial "down time" existed. Further investigation revealed that the work load of the team had as much to do with "down time" as with the under-utilization of NCOs in various phases of OF studies. Thus, improved scheduling of work within the team and/or increased delegation of duties to NCOs would not totally eliminate "down time."

Several individuals expressed the opinion that the team should be composed only of officers, but most felt a team made up of one or two officers and two to four enlisted men would be most effective. A frequent suggestion was to include a trained analyst in each team to aid

in more technical areas of analysis.

Research questions. What modifications to organization design might capitalize on individual talents and skills more fully? Should there be more centralization/specialization, or less?

Findings. One suggested change was to eliminate the team structure in favor of having a central pool of task analysts from which to draw for each study on the basis of skills and team size needed. As discussed in more detail in the next chapter, a modified form of this approach was eventually adopted. Initial reactions to this suggestion were mixed. Many were very skeptical and seemed to feel the team concept was "sacred" and any other form of organization would be a radical and undesirable departure from tradition. A few, particularly officers, were reluctant to commit themselves when the suggestion was first proffered but apparently thought the idea had substantial merit.

NCOs generally preferred more specialization in duties at OMU. Virtually all of them desired more specificity in their assignments and more concrete definitions of their jobs. Most of the officers were aware of this but thought that the team approach was better suited to utilizing NCOs as generalists rather than specialists. Two of the teams had made formal assignment of specialist duties to NCOs, and according to the NCOs, this was desirable. The view that "NCOs want to know exactly what to do" was expressed by officers and NCOs alike.

SUMMARY

The basic finding was widespread discontent with the traditional team approach. The disadvantages of lack of inter-communication among teams,

dysfunctional competition, and the feeling that individuals, especially NCOs, were not fully utilized, far out-weighed any advantages In addition, it was felt that team size was too large and contributed to "down-time". More specialization was desired by NCOs and substantial modification to existing team structure was suggested.

MANAGEMENT PRACTICES

Research question. How can planning and coordination for OF studies be improved?

Findings. Opinions of officers were almost evenly divided between those who felt that all team members should be involved in planning for OF studies and those who felt that planning should be restricted to officers. A higher proportion (almost two-thirds) of NCOs felt all team members should be included in planning for an OF study.

Officers and NCOs were evenly divided in their views regarding whether or not task assignments were well defined and coordinated. The NCOs stressed the belief that officers were often not specific about what they wanted. Recommendations to improve coordination included holding weekly meetings to advise all team members of the current status of studies, developing more effective coordination between the team leader and the assistant (suggested by an assistant team leader), and establishing standard operating procedures (SOP) for the studies (frequently suggested by both officers and NCOs).

In preparing for an OF study, officers emphasized the need for establishing standard procedures, developing guidelines for gathering data, and defining areas of responsibility. Overall, more precision in outlining tasks and procedures was stressed. The NCOs mentioned

such things as defining objectives and outlining procedures, but their predominant concern was in establishing a greater degree of teamwork.

A sample of responses from NCOs to the above research question follows:

> "Officers take all the responsibility."
> "More leadership is needed -- there is no teamwork."
> "Tasks and goals are not clearly defined."
> "Tasks are not assigned consistently."
> "Some personnel are not trained for their tasks."
> "The military-hierarchy promotes competition among members."

Research question. On what basis should individuals and teams be evaluated for performance?

Findings. Most individuals believed the team should be evaluated on the basis of the end result of the study -- how well objectives were achieved, quality of output, cost savings, and the like. One officer stated that there should be no team evaluation "because the entire study reflects the leader."

Overall, it was felt that individual evaluations should be based on individual performance in terms of contribution to the team, initiative, attitude, and ability to execute directives. Several NCOs mentioned that the evaluation should not be based on the fact that the individual "is an NCO" and should take into consideration that they are out of their field of specialization.

Only three of the NCOs felt they were evaluated on the basis of performance, and two of them felt personality factors influenced the evaluations. The others said they didn't know how they were being evaluated, or that they thought evaluations were subjective and based on personality, military bearing, and, "whether or not he says 'SIR'".

Two were satisfied with the evaluation process, as long as there were no personality clashes with the supervisor, while ten expressed various levels of dissatisfaction.

The officers believed the evaluations were based upon planning ability, military fitness reports, ability to execute directives, and "performance as a Marine -- dress, conduct, bearing, attitude, -- and as a task analyst". Officers were generally more satisfied with the evaluation process, although they also expressed some discontent because of lack of both training for the job and guidelines as to the basis of the ratings. Several individuals reported that all analysts were judged on the same basis, without taking into consideration length of service at OMU, experience in various phases of the studies, or related factors.

Research question. How effective are communication practices within and among teams?

Findings. Generally, communication appeared to be good among members of any given team. On the other hard, members of all teams noted that there was very little interaction among teams. Some felt that teams were too isolated, and because of this there was very little interaction except when a big problem arose. Other comments related to the fact that each team learned by its own trial and error. The need was cited for more sharing of experiences, mistakes, as well as special techniques found effective in handling certain problems. There seemed to be a general concensus that although interaction among teams is recommended and encouraged, very little takes place among enlisted men on different teams. Fairly good liaison appeared

to exist among the officer team leaders themselves.

There was also commendation for the institution of group seminars, the first of which was held in June, 1974. Team members almost unanimously agreed that seminars were an excellent way to share information and solve problems encountered in the studies.

Some of the presentations made in the first seminar, which focused on how each team conducted the Study Phase of Task Analysis, provide an interesting insight into inter-team communication, competition, and effects of team structure. An NCO indicated that the presentation made by his team leader was not accurate and was geared more to "impressing others" than "telling it like it is." Further questioning revealed that even officers conceded that there was some exaggeration in the seminars.

Another aspect of communication, or lack of it in this case, is revealed by the following comment by a senior NCO:

> Work relations could be improved. No one wants to feel he can't carry his load. I've had 18 years of experience in the Marine Corps and now I've been put into an unknown situation. I'm not going to ask questions, it makes me look bad. And yet, I'm supposedly researching something that will change a Marine's career....

This view was shared by other NCOs -- they were hesitant to admit ignorance by asking questions. Another comment was: "I'm not going to go to another team and ask a question; it shows we don't know what we're doing." In sum, absence of effective communication, especially among teams, was probably a symptom of other problems such as team structure, competition, and lack of training.

Research question. Is the three-year tour of duty at OMU enough

time for individuals to learn Task Analysis and contribute effectively to the mission of OMU?

Findings. Length of service at OMU ranged from less than six months to more than three years. Very few of the Office members' -- only two officers and five enlisted men -- had participated in an OF study from start to finish. It was learned that an individual's level of confidence in his Task Analysis abilities was not necessarily related to length of service, since some relatively new team members expressed confidence in their abilities while others with several years of experience did not feel sure of themselves. One officer said his level of confidence was "reasonable in view of the manner in which I was not trained," and an NCO said he was "still not qualified -- not because I'm not capable but because I'm not given the opportunity to utilize my talent due to the rank system and the lack of understanding of the NCOs' situation at OMU by some officers."

A frequently quoted statement was, "It takes at least a year for new members to become useful in Task Analysis." This observation was repeated so often, by officers and enlisted men alike, it appeared to be an "article of faith" in OMU, as one officer described it. The basic reason for this was that after a year or so in OMU, a member would have been exposed to most, if not all, phases of Task Analysis, and would, therefore, be "trained." This clearly illustrated the OJT approach to training. The fact that a new member of OMU might spend as much as one-half of his tour as an apprentice in training was regarded by virtually all officers and NCOs as inefficient and ineffective.

Compounding the problem was the fact that unless overlap existed between the member ending his tour and his replacement, the new member had to learn completely what the incumbent had gained from OJT. This, plus the fact that very little recorded history of experience exists, means that in the absence of formal training, the "article of faith" was probably accurate.

The basic finding was that formal training in Task Analysis would be essential to shortening the unproductive time of new members joining OMU. It was recognized that formal training could not entirely substitute for on-the-job experience, but it was felt that the training period could be compressed so that a greater portion of the three-year tour would be used in effective contributions to the mission of OMU.

Another aspect of the three-year tour of duty was timing. Almost all agreed that it would be better if OMU were not the last tour before retirement. One officer expressed this opinion:

> A senior NCO spends 15 or so years getting to the top in his MOS -- it's the capstone in his career. If all of a sudden, he's sent to OMU, he's away from what he knows and doesn't have the respect he wants. NCOs would be more motivated while they're here if they knew they would return to their MOS.

Research question. What are the advantages and disadvantages of the practice of having OF studies conducted by "naive" personnel, i.e, officers and NCOs who have neither experience nor training in an OF being studied?

Findings. According to all OMU personnel contacted, the principal advantage of utilizing naive analysts was that it enabled the team to approach the study objectively. Bias from past experience, it was

maintained, could be minimized. For some studies, an OMU member who was from the OF being studied would be made available as a local source of information. As far as could be determined, there was unanimous concurrence with the "naive approach," and it appeared to have no significant disadvantages.

SUMMARY

The major findings regarding management practices are listed below:

1. There was expressed need for standard operating procedures which would assist in planning and coordinating OF studies.
2. Teamwork would probably be enhanced if more team members were involved in planning and preparing for OF studies.
3. Widespread discontent among NCOs existed relative to how they were evaluated for performance.
4. There was no apparent consensus on how teams should be evaluated for performance.
5. Communication/interaction among teams was viewed as ineffective or non-existent.
6. Lack of effective communication prevented learning from other's experiences and hindered improvement in the conduct of OF studies.
7. Poor communication appeared to be mainly a symptom of problems related to team structure and competition, and lack of training.
8. The 3-year tour of duty at OMU is acceptable if training could be developed to shorten the learning period for new members.
9. It would be desirable if a) some overlap in time could be arranged for those leaving and their replacement, and b) one tour of duty remained after an NCO completes duty at OMU.
10. The approach of utilizing naive analysts on OF studies appeared to have no significant disadvantages.

PERSONNEL SELECTION AND ASSIGNMENT

Research question. Are the present criteria for selecting officers and NCOs for duty at OMU adequate, or are there additional qualities or capabilities that should be sought in OMU personnel assignments?

Findings. It was generally agreed that the practice of having the team leader designated as "SEP desirable" was very useful to OMU and contributed to providing high-quality team leaders. For many officers, selection for duty at OMU was an honor. Almost all officers felt that being attached to HQMC was career enhancing, although being away from their primary MOS was not particularly desirable to them. For some officers, OMU represented a payback tour for education completed at Marine Corps expense.

It was found that most of the officers had some graduate education and, therefore, possessed some skills in such areas as research methods and analysis, and report writing. These capabilities were viewed as highly desirable for Task Analysis.

Regarding selection of NCOs for duty at OMU, a frequent comment, particularly from officers, was that an NCO had to be in the top 10 percent in his MOS before he could be selected for Task Analysis. This criterion was known to NCOs but apparently not believed. Very seldom did NCOs suggest that selection for duty at OMU was based upon competence in one's OF. NCOs were almost unanimously negative in their comments on being selected for Task Analysis -- most did not know why they had been assigned, or they believed they were simply an "available body" at the time of an opening at OMU.

There was a consensus about several qualities an NCO should possess:

good communication skills, ability to get along with others, and some college experience. It was particularly stressed that the ability of an NCO to write clearly and grammatically should be an integral part of selection for assignment to OMU.

Some disagreement existed regarding the value or need for E-9's in Task Analysis. Some viewed them as "misfits" who were close to retirement and should have been performing in their primary MOS. Additionally, some officers expressed the view that they were "too pressed in their ways." Another opinion was that having a senior enlisted man on the team was valuable because "there is need for regimentation and a focal point for dissemination of orders."

Summary. The present practice of assigning officers with high education levels is viewed as adequate for duty at OMU. No additional capabilities were stressed as necessary for officers.

Dissatisfaction was expressed regarding selection and assignment of NCOs, and both officers and NCOs agreed on certain qualifications, such as communication skills, an NCO should possess for duty at OMU.

MORALE

This section summarizes some of the past discussion that relates to morale and provides some additional insights into the feelings about duty at OMU.

Research questions. What is the overall organizational climate? Are there dysfunctional conflicts or other factors that impede teamwork?

Findings. Morale among officers appeared to be quite high. As mentioned earlier, duty at OMU is viewed by some as an honor, and they

generally thought the work they were doing was important and provided a great deal of personal satisfaction. However, two officers indicated that they had revised their Marine Corps aspirations downward as a result of HQMC experiences: "Now I know how promotion boards really work; I used to want to be Commandant of the Marine Corps. I've seen guys really screwed in fitness reports."

In contrast, morale of many NCOs appeared quite low, some officer-NCO conflict was noted in responses of enlisted men. Many were dissatisfied, and a few seemed bitter about being attached to OMU. Several shared a feeling of -- "scared as hell after I got here," as one put it -- insecurity, and having to perform duties they were not trained to do. In a focused-group session with NCOs, there was general agreement with the statement made by one participant: "We're supposed to do research. We don't even know what the word means!"

In summary, NCOs seemed to resent their service at OMU, and some felt that the duty hurt their careers and put them at a considerable disadvantage with respect to promotions and recognition within the Marine Corps. One NCO believed that 3 years was too long. He felt that a man in a highly skilled field "gets rusty when away from his MOS for so long and tends to lose much of his expertise."

Two additional factors, not discussed above, were found to affect morale in a negative way. The first related to NCOs and apparently was a result of their attachment to the HQ Battalion. Originally, their attachment was for "administrative" purposes only, but this was changed 2 or 3 years ago. The result was that NCOs are assigned to extra duty that is not part of their primary Task Analysis assignment,

e.g., O.D. watch. Aside from regarding extra duties as a nuisance, several commented that if they had been "hand selected, and OMU was so 'special,'" why did they have to perform extra duty? Also related to this was the requirement to attend periodic battalion training classes, viewed by many as repetitive and a waste of time.

One frequently expressed factor was a source of discontent to officers and NCOs alike. Although assignment to OMU was considered shore duty, many team members were away from home for up to three months out of each year.

FINAL REPORT PREPARATION

Research question. How could the process of preparing the final report be improved?

Findings. Both officers and NCOs expressed the opinion that the final reports lacked thoroughness and accuracy. NCOs were especially critical, reporting that much data were distorted or omitted in order to project final results and recommendations that would be accepted, rather than presenting data as actually found.

The comments by one team leader summarize some of the findings on this subject:

> The written format we use varies from the Marine Corps Manual format. Task Analysis is deviating from this. Why? Doesn't make sense. Why not give a team the opportunity to write a better report? The present format doesn't allow for better write-ups and may be leaving important things out, like 'alternatives.'
>
> We review recommendations with sponsors and monitors and make changes. You could find legitimate things wrong in the Marine Corps and they get deleted because two guys at HQMC don't

> like them. That's the reason for our great batting average. One team recommended a new MOS once; they justified and documented it. They were laughed out of the sponsor's office. Really embarrasing. This got to them and they said, 'OK, never again.' They were compromised, and it affected the team significantly.

Suggested means of improving the reports included having greater team participation -- mentioned by NCOs -- better documentation, and inclusion of actual data.

It is interesting to note that many officers believed that NCOs provided significant input into final reports, while only one NCO was of that opinion. Recommendations for the actual writing of the reports were: compilation of many "mini-reports", having each team member write a draft, and incorporate parts of all the drafts into the final report; and use of a centralized team of technical writers who would have responsibility for writing all final reports.

All respondents reported receiving little feedback on their studies. That which was received was "both good and bad", with officers indicating "mostly bad from staffing" and stating that the reports "create hate and discontent at HQMC." NCOs reported "very little filters down." Sources of feedback were primarily HQMC staff, briefings by team leaders, and routing sheets with comments.

This scarcity of feedback seemed to be very significant in amplifying the discontent with OMU duty, since it may have indicated to OMU personnel that the Office was a "stepchild" of the Marine Corps whose efforts and accomplishments go unnoticed.

SUMMARY COMMENTS ON THE FINDINGS

In every instance, we found that personnel in OMU were eager to

provide candid views regarding their perceptions and evaluations of OMU organization, structure, management practices, policies, and the like. When reviewing the findings in this chapter, one should bear in mind that overall there was exhibited a great deal of respect, confidence, and trust among OMU members, as well as admiration that top management would solicit and support thorough study by outsiders. In all cases, respondents' suggestions for change and criticisms of present policies, procedures, or practices were offered in a spirit of being constructive for the organization as a whole rather than in a self-serving, vindictive, or destructive manner.

No matter how skilled the researchers are in interview or survey techniques, the organizational context and atmosphere are critical in obtaining honest, accurate, and complete data. We believe that the high quality of data obtained can be attributed in great measure to the OMU members themselves and to the receptive atmosphere created by top management.

CHAPTER V

PHASE III: CONCLUSIONS

INTRODUCTION

Two important factors should be kept in mind when reviewing the findings. First, these data do not "stand alone" -- they must be considered in the context of an organization undergoing intensive self-examination. Second, rather than the researchers assuming a passive role, they often pointed out findings to OMU management during the research process. Forthright actions often were initiated immediately, and in some cases management had anticipated the research findings. In this sense, OMU represented a "moving target."

THE PROCESS LEADING TO ORGANIZATION CHANGE IN OMU

In parallel with Phase II research efforts, changes in organization structure were being considered within OMU. As indicated in the previous chapter, many individuals had specific ideas as to how OMU should be structured, and the researchers participated in several informal discussions of the problem. An ad hoc committee consisting of team leaders and chaired by the Assistant Director was established to develop and examine alternatives. It was not a foregone conclusion that OMU organization structure would be changed, but the management climate for constructive dialog on the subject existed.

Although the research effort was to some extent a cause for reconsideration of OMU organization structure, and provided inputs for discussion, it was clear that OMU members themselves had seized the opportunity for self-examination and improvement. Although one officer

commented that "the process of organizational changes really began when the research project started," it was a combination of internal and external factors that initiated serious consideration and eventual implementation of planned organization changes in OMU.

Two external factors, factors largely beyond the control of OMU, or of research staff members were important in considering reorganization. The first was related to staffing difficulties within HQMC. The physical separation of OMU from the Arlington Annex made it difficult to maintain direct contacts at the action officer level to facilitate the staffing process. The team concept meant that each team prepared its staffing proposals in Task Analysis separately, thereby increasing the difficulty for face-to-face contact and coordination.

The second factor had to do with the anticipated future workload of OMU. Since OMU had studied many of the occupational fields once, and because TAD funds were becoming increasingly scarce, top management of OMU perceived neither the need nor the capability for continuing the Task Analysis Program at the same level of effort as during the previous five years. In fact, projecting to February 1976, only about four new studies per year were contemplated. Therefore, a reorganization and reduction in size of OMU was expected.

It was generally agreed internally that although the team concept in Task Analysis was consistent with organizational approaches in the Marine Corps and provided a locus of control for conducting OF studies, it had contributed to the following major problems:

1. Non-standardization in the conduct of OF studies

2. Dysfunctional competition among teams that prevented effective communication.

3. Ineffective manpower utilization within teams which contributed to substantial down time.

In addition, since there was virtually no formal training program, the fact that many team members were utilized as "generalists" in Task Analysis meant that as much as one year or more of OJT was necessary before proficiency could be attained in various duties.

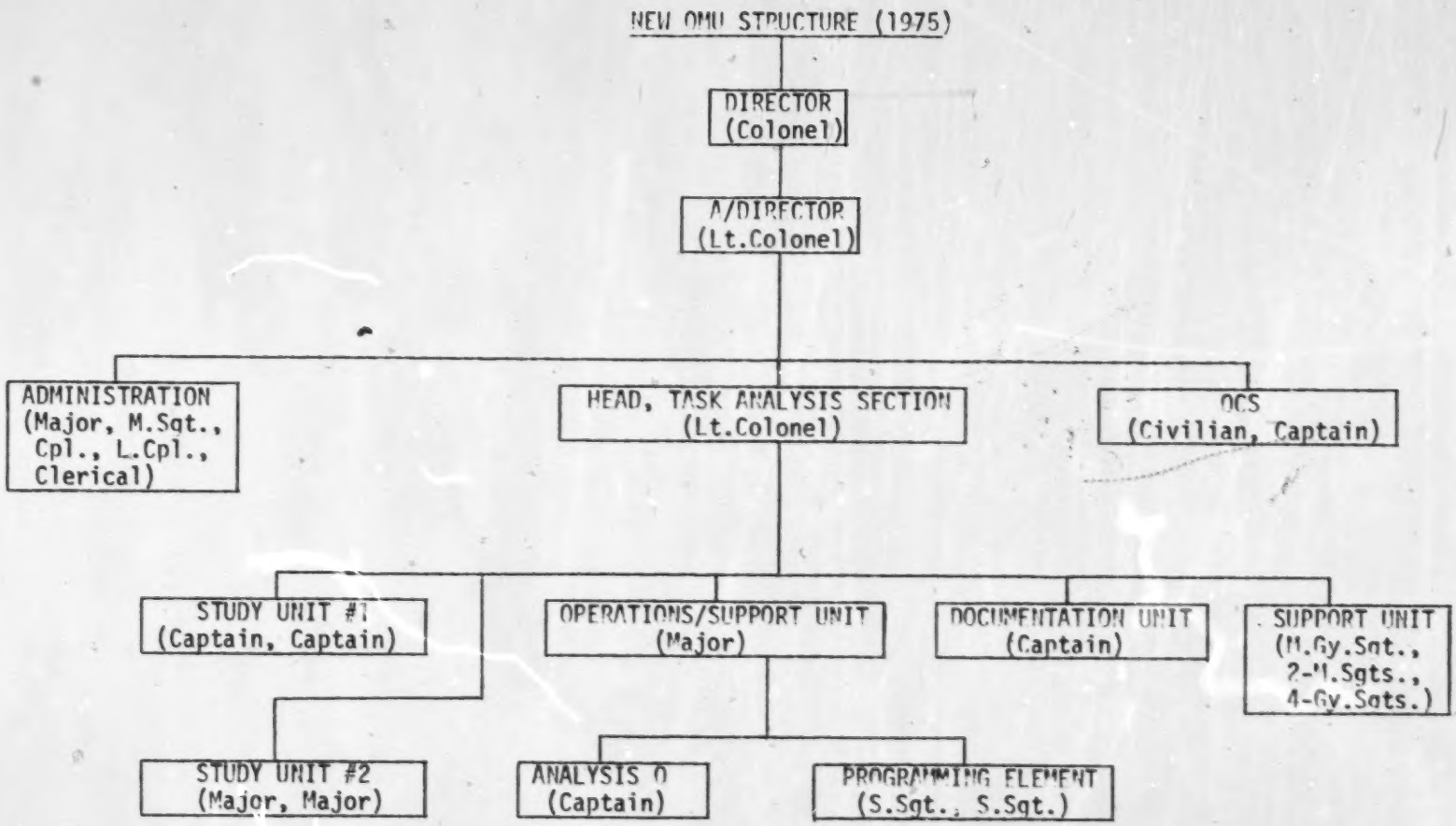
A consensus was reached that structural change could contribute to enhancing organizational effectiveness. It was also recognized that structural change, rather than being a substitute for improvement, should be combined with other actions.

Several alternatives were developed by the ad hoc committee, and the advantages and disadvantages of each were discussed. Alternatives ranged from retention of the basic team, reduced in size and modified to include civilian specialists in such areas as cluster analysis and/or report writing, to a matrix form of organization where staff needs would be drawn from a manpower pool on an "as available and as needed" basis. The adopted organization change was a compromise between these two.

THE RESULTING CHANGES IN OMU ORGANIZATION

The revised table of organization appears on the following page. A Task Analysis project is assigned to a Study Unit comprised of two officers, Captain or Major in rank. The Study Unit is responsible for the project from its inception until the initial Task Analysis report has been passed to the the Operations/Support Unit for final report

Figure 2


NEW OMU STRUCTURE (1975)
DIRECTOR (Colonel)
A/DIRECTOR (Lt.Colonel)
ADMINISTRATION (Major, M.Sgt., Cpl., L.Cpl., Clerical)
HEAD, TASK ANALYSIS SECTION (Lt.Colonel)
OCS (Civilian, Captain)
STUDY UNIT #1 (Captain, Captain)
OPERATIONS/SUPPORT UNIT (Major)
DOCUMENTATION UNIT (Captain)
SUPPORT UNIT (M.Gy.Sgt., 2-M.Sgts., 4-Gy.Sgts.)
STUDY UNIT #2 (Major, Major)
ANALYSIS O (Captain)
PROGRAMMING ELEMENT (S.Sgt., S.Sgt.)

writing and staffing.

The Study Unit has temporary augmentation support, as needed, from the Operations/Support Unit for each Task Analysis function. Such support could include assistance with observation and interviewing, task inventory administration, data transcription, and the like. The Head, Task Analysis Section, allocates personnel resources in support of the two Study Units, and in support of the Analysis Officer and the Documentation Officer, in accordance with priorities assigned by the Head, Task Analysis Section.

Within the formal reorganization, explicit attention is given to specialization. Computer programming, data analysis, and documentation (report writing) are specific areas of specialization. Members of the Support Element are to be semi-specialized and will concentrate most of their training and effort in one or two Task Analysis phases in order to become expert in those areas. At the same time, flexibility is retained in the interest of maximum utilization of personnel resources, so that any Support Unit member may be assigned to any Task Analysis project. The project assignment(s) of a Support Unit member may be to one of the Study Units, to the Analysis Officer, to the Documentation Officer, or as otherwise directed by the Head, Task Analysis Section.

The Head, Task Analysis Section, has overall responsibility for projects assigned to the Task Analysis Section, and he reports to the Assistant Director. In addition, this officer is designated as Task Analysis Training Officer and establishes and conducts or supervises all training programs related to new members and continuing training

programs for all Section members in the Task Analysis process.

In summary, a locus of operational attention is the Study Unit. Each unit plans and organizes a study in a manner similar to that practiced with the previous team concept. The principal difference is that the Operations/Support Unit provides technical and administrative services, freeing the Study Unit from 1) time-consuming, low-skill tasks, such as inventory administration, and 2) specialized, high-skill tasks, such as data processing and technical analysis. Specialization is extended to editing final reports and HQMC staffing.

RELATIONSHIP OF THE ORGANIZATION CHANGE TO FINDINGS OF THE STUDY

The reorganization of OMU became effective on 15 June 1975. At the time of preparing this report, it was too early to assess the effects of the changes in relation to the research data presented in Chapter IV. However, it is possible to discuss potential strengths of the new organization, as well as its potential weaknesses or trouble spots compared to findings of the study, and to offer suggestions relative to future actions.

Potential strengths. As pointed out in ad hoc committee discussions and research team contributions, the new organization provides the following advantages:

1. Specialization where appropriate: It should encourage the development of special expertise in several of the more difficult functions of Task Analysis instead of relying on every team member to be a master of many skills.

2. Flexibility in manpower utilization: Assignment of NCOs is given a great deal more flexibility -- they can be employed where needed. This should reduce downtime while providing

the NCO with more specifically defined job duties.

3. Standardization and training: This has both internal and external features. Internally, the isolation, self-sufficiency and the resultant competitive nature of the previous team approach thwarted standardization. These factors also hindered overall improvement in conducting Task Analysis because of the reluctance to share ideas and experiences. Since elements of the new organization must rely on each other and are inter-dependent, and since training is a formal part of the new organization, standardization would not only appear feasible, but probably essential.*

   Externally, by combining all Task Analysis under a single unit, and by consolidation of those functions such as report writing and staffing by which OMU interfaces with outside groups and individuals, a more standardized approach and integrated image of the Task Analysis Program is likely to result.

It appears that the new organizational structure introduces features which can overcome the three major weaknesses found in the previous team structure: non-standardization, dysfunctional competition, and manpower disutilization. Overall, our conclusion is that the new form of organization represents a healthy departure from the traditional structure of OMU and could lead to definite improvements in the efficiency and effectiveness of the office.

Potential weaknesses. As mentioned, there has been too little experience with the new structure to provide an initial critical assessment. However, it may be worthwhile to indicate some likely trouble

*The need for standardization was recognized by OMU management, and another ad hoc committee was established to develop SOP. The result of their work at the time of preparing this report had resulted in draft SOP documents covering about one-third of the Task Analysis process.

spots which OMU management may wish to monitor. The following list of such possible problem areas is derived from 1) early discussion of the ad hoc committee relative to possible disadvantages of the new structure, 2) the findings of the research in Phase II, 3) the researchers' knowledge of OMU organization and personnel, and 4) the experience of other organization structures.

1. Effective coordination and planning: Since individuals in OMU may be working with different people and on different project assignments during the same time period, without coordination and planning of activities, manpower and resources would appear to be a likely problem unless explicit procedures and useful techniques were established. The use of a PERT approach would seem to be ideal under the new structure since it was designed for the kind of "project management concept" now being employed in OMU. The use of PERT as a tool should assist OMU management in planning and staffing, in resource allocation, and in controlling and evaluating project assignments.

2. Clear-cut responsibility and accountability: Unlike the self-sufficient team where these could be pin-pointed, the new structure could diffuse responsibility and accountability to the extent that considerable conflict among individuals and groups might result. Clarity and consistency in "who reports to whom" is essential, and is related to judicious coordination and effective planning discussed above.

   Under the new structure, fitness report preparation would seem to be a more complex and sensitive area. For example, individuals in the Operations/Support Unit may have worked together while having simultaneous temporary assignments to both Study Units during the reporting period. Therefore, data and assessment for fitness reports may have to reflect performance under more varied conditions than

before.* As always, perceptions of equity and fairness will have important influences on cooperation, teamwork, and overall morale.

3. Increased informal organization: Beneath the cloak of formal relationships indicated in OMU's new table of organization will be a more complex system of social relationships called the informal organization. It will have a powerful influence upon productivity and job satisfaction.

   Under the previous structure, the informal organization was apparently limited primarily to team membership. However, the new structure mitigates competition and may expand the range, complexity and importance of the informal organization. There are two noteworthy features of informal organization relevant here. First, it has been observed that in other organizations with similar structures, the informal organization can function to resist substantive change, foster rumor and encourage role conflict because of actions that are at variance with what the organization regards as appropriate behavior. Second, influences of the informal organization could be especially detrimental in OMU if favoritism develops. For example, if either a) the same individuals in the Operations/Support Unit get all the undesirable work, or b) the same individuals are consistently given the preferred job assignments, those "left out" or not favored could exert dissatisfaction through the informal organization.

   None of the above effects of informal organization may occur. This brief discussion is presented merely to highlight the potential importance of informal organization implicit in the new OMU structure.

4. Job stagnation and boredom: Clearly, the new organization structure encourages increased specialization. Aside from the many benefits of specialization already noted, a negative

*A further example of the initiative of OMU was "OMU Memorandum #6-75; Fitness Reports," dated 2 July 1975. This memo appears to anticipate the potential problems outlined here and prescribes fitness reporting procedures consistent with the varied working conditions under the new organization.

result could be repetitive work that provides little challenge.

Task inventory administration is an example of a job particularly vulnerable to this problem. Not only could this work itself become boring, but also the job requires considerable travel, already revealed to be a source of dissatisfaction.

Although specialization is desirable, job rotation will probably be necessary to prevent stagnation and provide opportunities for personal growth.

5. Myopia in the Task Analysis process: Directly related to the previous item, increased specialization could lead to "tunnel vision" in conducting Task Analysis. If individuals are not permitted a certain amount of job rotation, or are not allowed to understand or participate in varied duties in Task Analysis, job permanence could seriously hinder development of new ideas or techniques.

6. Specificity and more control in personnel selection and assignment: An additional effect of increased specialization is the need for more specific selection criteria and more control by OMU in selecting personnel for duty in OMU. If past patterns of officer selection are continued, this will probably not be a problem. However, for NCOs selected for OMU, past patterns will definitely not be adequate.

Other considerations. The apparent strengths of the new organization structure address most of the negative findings of the study, and additional actions such as developing SOP give further attention to the problem of standardization and provide one basis for training. An additional consideration relates to final report preparation and feedback.

There is every reason to believe that specialization in report writing ("Documentation" in the new structure) can resolve the problem of standardization and result in final reports that satisfy the criteria of

objectivity, substance, organization, and clarity of expression. However, the new organization approach does not, and perhaps cannot, address the problem of obtaining timely and adequate feedback. As noted in Chapter III, scarcity of feedback appeared to be an important source of discontent. Since the final report is the end product of Task Analysis and represents the sum of efforts of OMU personnel, every effort should be made to obtain and disseminate feedback on how the report was received and the results of report recommendations. Such feedback should probably be shared with all OMU members and could serve both as a learning tool and as a source of pride in accomplishment.

Summary. The advantages of the new organization structure seem to far outweigh the potential disadvantages. The potential trouble spots discussed above are important to consider because they are based upon findings of the study of OMU under the previous structure and because the new structure is intended to resolve some of the organizational problems revealed in these data. It would seem to be useful to examine and document the effects of the new organization in resolving these difficulties over a period of time and to explore the overall effectiveness of the new structure itself after it has been in effect during at least two OF studies.

RECOMMENDATIONS FOR FURTHER ACTIONS BY OMU

Despite the changes introduced by the reorganization, there are several suggestions related to management processes deserving attention and comment in this report.

1. Planning and coordination. With the new organization as with the old, weekly meetings of each team could be very worthwhile. In addition, the need for standard operating procedures is real. As one

step in this direction, a manual for the use of PERT in OMU Projects has been prepared as a supplement to this final report for R. A. 5.

Also, the need for useful performance evaluations will persist. As a first step, OMU should develop and communicate standard criteria for use in these evaluations. Standard criteria will become more important as more use is made of a matrix-type organization. With several evaluators, uniform criteria are essential.

2. Communications. In addition to weekly meetings, group seminars, following the pattern most recently used, could help improve the over-all level of internal communications.

3. Scheduling tours of duty at OMU. The present practice of three-year tours seems to be satisfactory, especially if augmented by formal training early after assignment. It would be helpful to provide some overlap for new members of the staff.

4. Naive personnel. The advantages of traditional practice outweigh the disadvantages, especially if teams can benefit from augmentation, when possible, by members of the OMU staff with experience in each OF under study.

5. Selection and assignment. Past practice seems satisfactory so far as officers are concerned. The practice of assigning officers with appropriate educational backgrounds to OMU has been further enhanced with approval of the new table of organization. Officer specifications in the T.O. provide that seven officers of the eleven authorized possess post-graduate degrees.

For NCOs, OMU should develop more specific selection criteria and solicit cooperation from monitors in meeting the desired specifications. The selection of NCOs is considered to be a critical problem. The Director of OMU should be given the opportunity to review the personnel records of NCOs proposed for assignment to OMU, be an integral part of selection along with

the monitor, and have the right of veto. It is hoped that the Chief of Staff, HQ, USMC will support and implement this recommendation.

6. Morale. Several factors seem to have had a dysfunctional effect on morale. Suggestions have been made for improvement in fitness reports and appraisals. Requirements for extra duty should be reduced or eliminated; excessive travel will necessarily be reduced because of limited funding for TAD within the foreseeable future.

7. Final report preparation. Two highly desirable changes are in order in the preparation of final reports. Provision should be made for wider team participation, and similar attention should assure more thorough feedback to team members. Expression will presumably be improved by specialization of writers, and wider participation may result from the development of individual mini-reports prepared by NCOs to provide a fuller representation of conclusions for consideration by the final report writers.

8. The desire for excellence in performance and achievement of goals. The research project of which this report is a part was initiated because of the desire of members of the OMU staff to ensure that their efforts would make a maximum contribution to effective utilization of manpower in the Marine Corps. To accomplish this, OMU was willing to ask an outside organization to make an objective evaluation of the effectiveness of its operational procedures and organizational structure. As a former Director of OMU phrased it, "We have laid out our dirty linen for outsiders to look at. Let the chips fall where they may." We cannot close this report without an expression of our admiration for the courage of the leaders of an organization to "put it on the line" in its desire to become maximally effective in its mission, as OMU has done.

Throughout this research, as mentioned earlier in this report, OMU has

maintained a stance of complete openness and honesty about every phase of its operations. This has greatly simplified the task of our research staff. Our efforts have been enhanced by the complete cooperation we have received from OMU. And, the initiative and innovative implemations by OMU of ideas generated during our research have been a source of great satisfaction to all members of our research staff in all of the eight research areas of which this report on R. A. 5 is a part.

We commend all members of the staff of OMU for their desire for excellence in performance of their mission to improve effective utilization of manpower in the Marine Corps. We hope that the results of our research efforts will be a spur to the present OMU staff, and those who follow, to continue this attitude and effort towards excellence.

We conclude this Research Area 5 summary with our compliments and congratulations to OMU for its prompt, definitive action in implementing significant improvements during the course of the study and our feeling of assurance that similar attention and thoughtful consideration will be given to the suggestions for further change outlined on pages 43, 44 and 45 of this report.

APPENDIX

OMU QUESTIONNAIRE

This questionnaire was used to gather written data from OMU members. It was administered during Phase II (see page 6) and proved effective in encouraging both Officers and NCOs to express their reactions to OMU organization and management practices and provide suggestions for improving the Task Analysis process.

OMU QUESTIONNAIRE

This questionnaire is designed to provide the opportunity for you to comment freely and openly on various aspects of OMU organization and operations. Your responses will be held in strict confidence by the research staff at California State University, Los Angeles Foundation.

Take as much time as you wish. Your comments on the enclosed topics are vital to our efforts fully to assess OMU efforts and to develop viable recommendations for improvement.

THANK YOU

DO NOT WRITE YOUR NAME

ON THE QUESTIONNAIRE

Section I.

1. Describe as specifically as possible your job at OMU, in your own words.

2. Preparing for an OF study: In planning, you work out the best way you can think of to reach a target. You do this before you act to reach the target. If you plan with care, you will make it easier to get there than if you don't.

   a. How could a team do a better job of planning for an OF study?

   b. What might be included in the planning process?

   c. How should it be done?

   d. Who should do the planning?

3. Assessing efficiency and effectiveness:

a. How should a team conducting an OF study be evaluated for performance?

b. How should individuals on a team be evaluated for performance?

c. How are individuals now evaluated for performance?

d. How satisfied are you with the present evaluation approach? Why?

4. Team size, composition, and coordination:

   a. Is the number of individuals on a team too large or too small? Why?

   b. What about the composition of a team? What, in your opinion, might be the ideal composition of a team -- regarding the structure (who does what) and the nature (backgrounds or skills of the individuals)?

   c. How could communication be improved in your team?

   d. Are job tasks on your team carefully defined and coordinated? (Please explain.)

   e. How could coordination be improved?

5. Inter-team communication:

   a. What kinds of information or ideas are shared among teams?

   b. Does existing communication among teams contribute to the effective completion of OF studies?

   c. How could communication among teams be improved?

6. Selection for duty at OMU:

   a. Why do you think you were selected for duty at OMU?

   b. What specific qualities or capabilities do you believe an NCO should have to be selected for duty at OMU?

7. Orientation to OMU:

   a. Describe how you were oriented to the SOP of OMU when you arrived.

   b. For individuals just arriving for duty at OMU, how could the orientation process be improved?

8. Data analysis: (general)

   a. What part do you play in interpreting the tree diagrams?

   b. If you do play a major part, how do you determine the boundaries of an MOS cluster from the diagram?

   c. Do you have a preformed hypothesis of what an OF will look like before analyzing the tree diagram?

      If so, what "hunches" or assumptions lead to the development of the hypothesis?

9. Data Analysis (specific)

a. Please list the stages or steps you go through in alalyzing the diagrams.

b. What descriptive statistical techniques (for example, the mean or mode) are used to review the data before naalytical tests are employed?

c. Do you often have to "force" or isolate a small group in order to form a cluster?

If so, what criteria do you use to decide to which cluster it belongs?

d. Besides the members of your own team, who assists in alalyzing the diagram output?

e. Besides OMU on-the-job-training, have you had other experience with cluster or classification analysis? (Please specify.)

f. Please list any items relative to clustering and data analysis about which you feel uncertain or would like more information.

10. Final Report Preparation: What are your own reactions to OF study reports that have been completed by team(s) to which you have been assigned?

    a. Once they were completed, how did you feel about their completeness, accuracy, and potential impact on subject OFs?

    b. What could be done to improve the final report preparation process?

    c. What member(s) of the team (don't mention names) usually develop(s) or formulate(s) the recommendations in the final report?

    d. How should the writing of the final report be accomplished?

    e. What kinds of feedback have you or your team received on completed OF studies?

    f. What are the sources of any feedback you have received?

11. Task inventory review: How do you feel about the policy of not allowing deletions of task statements when task inventories are reviewed? Please explain.

Section II.

1. Have you been involved in an OF study from start to completion?

yes _____ no _____

If yes, how many? _____

2. How long have you been at OMU? (check one)

___a. less than 6 months
___b. 6 months - 1 year
___c. 1 - 1½ years
___d. 1½ - 2 years
___e. 2 - 3 years
___f. over 3 years

3. How confident are you now that you are well prepared for performing tasks you have been assigned at OMU?

4. What have you learned from your experience at OMU that you would like to pass on to future members of the OMU organization?

5. In the space below, please add any comments you believe might help us to fully explore the overall operations of OMU or the conduct of task analysis.

DISTRIBUTION LIST

Navy

4 Dr. Marshall J. Farr, Director
Personnel and Training Research Programs
Office of Naval Research (Code 458)
Arlington, VA 22217

1 ONR Branch Office
495 Summer Street
Boston, MA 02210
ATTN: Dr. James Lester

1 ONR Branch Office
1030 East Green Street
Pasadena, CA 91101
ATTN: Dr. Eugene Gloye

1 ONR Branch Office
536 South Clark Street
Chicago, IL 60605
ATTN: Dr. Charles E. Davis

1 Dr. M.A. Bertin, Scientific Director
Office of Naval Research
Scientific Liaison Group/Tokyo
American Embassy
APO San Francisco 96503

1 Office of Naval Research
Code 200
Arlington, VA 22217

6 Director
Naval Research Laboratory
Code 2627
Washington, DC 20390

1 Technical Director
Navy Personnel Research and
Development Center
San Diego, CA 92152

1 Assistant Deputy Chief of Naval
Personnel for Retention Analysis
and Coordination (Pers 12)
Room 2403, Arlington Annex
Washington, DC 20370

1 LCDR Charles J. Theisen, Jr.,
MSC, USN
4024
Naval Air Development Center
Warminster, PA 18974

1 Dr. Lee Miller
Naval Air Systems Command
AIR-413E
Washington, DC 20361

1 Commanding Officer
U.S. Naval Amphibious School
Coronado, CA 92155

1 Chairman
Behavioral Science Department
Naval Command & Management Division
U.S. Naval Academy
Annapolis, MD 21402

1 Chief of Naval Education & Training
Naval Air Station
Pensacola, FL 32508
ATTN: CAPT Bruce Stone, USN

1 Mr. Arnold I. Rubinstein
Human Resources Program Manager
Naval Material Command (0344)
Room 1044, Crystal Plaza #5
Washington, DC 20360

1 Dr. Jack R. Borsting
U.S. Naval Postgraduate School
Department of Operations Research
Monterey, CA 93940

1 Director, Navy Occupational Task
Analysis Program (NOTAP)
Navy Personnel Program Support
Activity
Building 1304, Bolling AFB
Washington, DC 20336

1 Office of Civilian Manpower Management
Code 64
Washington, DC 20390
ATTN: Dr. Richard J. Niehaus

1 Chief of Naval Reserve
Code 3055
New Orleans, LA 70146

1 Chief of Naval Operations
OP-987P7
Washington, DC 20350
ATTN: CAPT H.J.M. Connery

1 Superintendent
Naval Postgraduate School
Monterey, CA 93940
ATTN: Library (Code 2124)

1 Mr. George N. Graine
Naval Sea Systems Command
SEA 047C12
Washington, DC 20362

1 Chief of Naval Technical Training
Naval Air Station Memphis (75)
Millington, TN 38054
ATTN: Dr. Norman J. Kerr

1 Principal Civilian Advisor
for Education and Training
Naval Training Command, Code 00A
Pensacola, FL 32508
ATTN: Dr. William L. Maloy

1 Director
Training Analysis & Evaluation Group
Code N-00t
Department of the Navy
Orlando, FL 32813
ATTN: Dr. Alfred F. Smode

1 Chief of Naval Training Support
Code N-21
Building 45
Naval Air Station
Pensacola, FL 32508

1 Navy Personnel Research
and Development Center
Code 01
San Diego, CA 92152

5 Navy Personnel Research
and Development Center
Code 02
San Diego, CA 92152
ATTN: A.A. Sjoholm

2 Navy Personnel Research
and Development Center
Code 306
San Diego, CA 92152
ATTN: Dr. J.H. Steinemann

2 Navy Personnel Research
and Development Center
Code 309
San Diego, CA 92152
ATTN: Mr. R.P. Thorpe

1 Navy Personnel Research
and Development Center
San Diego, CA 92152
ATTN: Library

Army

1 Technical Director
U.S. Army Research Institute for the
Behavioral and Social Sciences
1300 Wilson Boulevard
Arlington, VA 22209

1 Armed Forces Staff College
Norfolk, VA 23511
ATTN: Library

1 Commandant
U.S. Army Infantry School
Fort Benning, GA 31905
ATTN: ATSH-DET

1 Deputy Commander
U.S. Army Institute of Administration
Fort Benjamin Harrison, IN 46216
ATTN: EA

1 Dr. Stanley L. Cohen
U.S. Army Research Institute for
the Behavioral and Social Sciences
1300 Wilson Boulevard
Arlington, VA 22209

1 Dr. Ralph Dusek
U.S. Army Research Institute for the Behavioral and Social Sciences
1300 Wilson Boulevard
Arlington, VA 22209

1 HQ USAREUR & 7th Army
ODCSOPS
USAREUR Director of GED
APO New York 09403

1 ARI Field Unit - Leavenworth
Post Office Box 3122
Fort Leavenworth, KS 66027

1 Dr. Milton S. Katz, Chief
Individual Training & Performance Evaluation
U.S. Army Research Institute for the Behavioral and Social Sciences
1300 Wilson Boulevard
Arlington, VA 22209

Air Force

1 Research Branch
AF/DPMYAR
Randolph AFB, TX 78148

1 Dr. G.A. Eckstrand (AFHRL/AST)
Wright-Patterson AFB
Ohio 45433

1 AFHRL/DOJN
Stop #63
Lackland AFB, TX 78236

1 Dr. Martin Rockway (AFHRL/TT)
Lowry AFB
Colorado 80230

1 Dr. Alfred R. Fregly
AFOSR/NL
1400 Wilson Boulevard
Arlington, VA 22209

1 Dr. Sylvia R. Mayer (MCIT)
Headquarters Electronic Systems Division
LG Hanscom Field
Bedford, MA 01730

1 AFHRL/PED
Stop #63
Lackland AFB, TX 78236

Marine Corps

23 Commandant of the Marine Corps (Code R
Headquarters, United States Marine Corps
Washington, DC 20380

Coast Guard

1 Mr. Joseph J. Cowan, Chief
Psychological Research Branch (G-P-1/62)
U.S. Coast Guard Headquarters
Washington, DC 20590

Other DOD

1 Military Assistant for Human Resources
Office of the Secretary of Defense
Room 3D129, Pentagon
Washington, DC 20301

12 Defense Documentation Center
Cameron Station, Building 5
Alexandria, VA 22314
ATTN: TC

Other Government

1 Dr. Lorraine D. Eyde
Personnel Research and Development Center
U.S. Civil Service Commission
1900 E Street, N.W.
Washington, DC 20415

1 Dr. William Gorham, Director
Personnel Research and Development Center
U.S. Civil Service Commission
1900 E Street, N.W.
Washington, DC 20415

1 U.S. Civil Service Commission
Federal Office Building
Chicago Regional Staff Division
Regional Psychologist
230 South Dearborn Street
Chicago, IL 60604
ATTN: C.S. Winiewicz

Miscellaneous

1 Dr. Gerald V. Barrett
University of Akron
Department of Psychology
Akron, OH 44325

1 Dr. Bernard M. Bass
University of Rochester
Graduate School of Management
Rochester, NY 14627

1 Dr. A. Charnes
BEB 512
University of Texas
Austin, TX 78712

1 Dr. Rene' V. Dawis
University of Minnesota
Department of Psychology
Minneapolis, MN 55455

1 Dr. Robert Dubin
University of California
Graduate School of Administration
Irvine, CA 92664

1 Dr. Marvin D. Dunnette
University of Minnesota
Department of Psychology
Minneapolis, MN 55455

1 ERIC
Processing and Reference Facility
4833 Rugby Avenue
Bethesda, MD 20014

1 Dr. Edwin A. Fleishman
Visiting Professor
University of California
Graduate School of Administration
Irvine, CA 92664

1 Dr. M.D. Havron
Human Sciences Research, Inc.
7710 Old Spring House Road
West Gate Industrial Park
McLean, VA 22101

1 HumRRO Central Division
400 Plaza Building
Pace Boulevard at Fairfield Drive
Pensacola, FL 32505

1 HumRRO/Western Division
27857 Berwick Drive
Carmel, CA 93921
ATTN: Library

1 HumRRO Central Division/Columbus Office
Suite 23, 2601 Cross Country Drive
Columbus, GA 31906

1 HumRRO/ Western Division
27857 Berwick Drive
Carmel, CA 93921
ATTN: Dr. Robert Vineberg

1 Dr. Lawrence B. Johnson
Lawrence Johnson & Associates, Inc.
2001 S Street, N.W., Suite 502
Washington, DC 20009

1 Dr. Ernest J. McCormick
Purdue University
Department of Psychological Sciences
Lafayette, IN 47907

1 Dr. Lyman W. Porter, Dean
University of California
Graduate School of Administration
Irvine, CA 92650

1 Dr. Joseph W. Rigney
University of Southern California
Behavioral Technology Laboratories
3717 South Grand
Los Angeles, CA 90007

1 Dr. George E. Rowland
Rowland and Company, Inc.
P.O. Box 61
Haddonfield, NJ 08033

1 Dr. Benjamin Schneider
University of Maryland
Department of Psychology
College Park, MD 20742

1 Dr. Arthur L. Siegel
Applied Psychological Services
404 East Lancaster Avenue
Wayne, PA 19087

1 Mr. George Wheaton
American Institutes for Research
3301 New Mexico Avenue, N.W.
Washington, DC 20016